

AMENDMENTS TO THE CLAIMS

Please cancel Claims 36, 37, 48-51, 46-58 and 62.

Claims 1-32 (cancelled).

33. (Currently amended) An oil from water separator comprising:

an oil disengagement chamber adapted to receive an oil and water mixture and retain it for a sufficient time in a relatively undisturbed state whereby oil in the mixture floats to the top of the mixture resulting in a substantially oil free volume of water having a layer of oil derived from said oil and water mixture floating on the surface thereof, said oil disengagement chamber partially separated from an effluent water chamber by an under flow baffle which ducts said substantially oil free volume of water to said effluent water chamber, the oil disengagement chamber having a low liquid level which is higher than the under flow baffle, the outflow of said substantially oil free volume of water from said effluent water chamber being limited by flow retarding means to a rate of outflow which is a function of the head of the liquid in said effluent water chamber;

wherein during operation, the level of said oil and water mixture will rise from a chamber low liquid level up to a higher liquid level and then return to said chamber low liquid level, thereby defining an oil and water mixture active lag capacity in said oil disengagement chamber caused in part by said flow retarding means, such that, for a predefined range of inflows into said oil disengagement chamber, outflow from said effluent water chamber will contain a proportion of oil in water substantially below a predefined limit.

34. (Previously amended) The separator of Claim 33, wherein said flow retarding means is operable to accumulate said oil and water mixture in said oil disengagement chamber in an oil and water mixture accumulation volume above said chamber low liquid level.

35. (Previously added) The separator of Claim 33, wherein said flow retarding means comprises at least one siphon which primes at a chamber high liquid level and loses prime at said chamber low liquid level.

36. (Cancelled).

37. (Cancelled).

38. (Previously amended) The separator of Claim 33, wherein said flow retarding means is sized with reference to expected inflow of said oil and water mixture into said oil disengagement chamber such that, during operation, the level of said oil and water mixture will rise from said chamber low liquid level and then return to said chamber low liquid level, thereby defining said oil and water mixture accumulation volume above said chamber low liquid level.

39. (Previously amended) The separator of Claim 38, wherein said accumulation volume is sized with reference to

- (a) inflow rate; and
- (b) desired residence time of said oil and water mixture in said oil disengagement chamber.

40. (Currently amended) An oil from water separation system comprising:

an oil disengagement chamber having an accumulation volume defined between a chamber high liquid level and a chamber low liquid level; said accumulation volume caused to exit from said chamber ~~on attainment of said chamber high liquid level~~ via an output member that controls the rate of output flow based on the liquid level of said chamber;

wherein during operation, the level of said oil and water mixture will rise from said chamber low liquid level up to said chamber high liquid level and then return to said chamber low liquid level, thereby defining an oil and water mixture active lag capacity in said oil disengagement chamber between said chamber high liquid level and said chamber low liquid level caused in part by the controlled rate of output flow, such that, for a predefined range of inflows into said oil disengagement chamber, outflow from said system will contain a proportion of oil in water substantially below a predefined limit.

41. (Currently amended) The system of Claim 40, wherein said ~~flush storage volume~~ is caused to exit by means of output member comprises a siphon.

42. (Currently amended) An oil from water separator comprising:

an oil disengagement chamber adapted to receive an oil and water mixture and retain it for a sufficient time in a relatively undisturbed state whereby oil in the mixture floats to the top of the mixture resulting in a substantially oil free volume of water having a layer of oil derived from said oil and water mixture floating on the surface thereof, and

means for retarding outflow from said chamber ~~until said mixture reaches a predetermined chamber high liquid level whereupon said substantially oil free volume of water is caused to exit said chamber~~ wherein the retarded outflow rate depends on the liquid level in said chamber;

wherein during operation, the level of said oil and water mixture will rise from said chamber low liquid level up to a higher liquid level and then return to said chamber low liquid level thereby defining an oil and water mixture active lag capacity in said oil disengagement chamber caused in part by said means for retarding outflow, such that, for a predefined range of inflows into said oil disengagement chamber, outflow from said separator will contain a proportion of oil in water substantially below a predefined limit.

43. (Currently amended) The separator of Claim 42, wherein, ~~on reaching said chamber high liquid level, outflow is initiated and maintained until a predetermined chamber low liquid level in said chamber is reached~~ said means for retarding outflow comprises initiating the outflow when the liquid level reaches a predetermined chamber high liquid level and maintaining the outflow until a predetermined chamber low level is reached at which time outflow is terminated.

44. (Previously added) The separator of Claim 43, wherein said means for retarding outflow is controlled by means sensitive to said chamber high liquid level and said chamber low liquid level.

45. (Previously added) The separator of Claim 42, wherein said outflow is drawn from a point at said predetermined low level in said mixture.

46. (Currently amended) The separator of Claim 44, wherein said means ~~sensitive to said chamber high liquid level and said chamber low liquid level is~~ for retarding outflow comprises a siphon.

47. (Previously added) The separator of Claim 44, wherein said sensitive means is a level switch actuated pumping system.

48. (Cancelled).

49. (Cancelled).

50. (Cancelled).

51. (Cancelled).

52. (Currently amended) An oil from water separator comprising:

an oil disengagement chamber adapted to receive an oil and water mixture and retain it for an extended time in a relatively undisturbed state whereby oil in the mixture floats to the top of the mixture resulting in a substantially oil free volume of water having a layer of oil derived from said oil and water mixture floating on the surface thereof, outflow from said chamber being controlled in a predetermined way by a flow retarding means member adapted to control said outflow wherein said outflow depends on the level of said oil and water mixture in said chamber;

wherein during operation, the level of said oil and water mixture will rise from said chamber low liquid level up to a higher liquid level and then return to said chamber low liquid level thereby defining an oil and water mixture active lag capacity in said oil disengagement chamber caused in part by said flow retarding member, such that, for a predefined range of inflows into said oil disengagement chamber, outflow from said separator will contain a proportion of oil in water substantially below a predefined limit.

53. (Currently amended) An oil from water separator comprising:

an oil disengagement chamber adapted to receive an oil and water mixture and retain it for a sufficient time in a relatively undisturbed state whereby oil in the mixture floats to the top of the mixture resulting in a substantially oil free volume of water having a layer of oil derived from said oil and water mixture floating on the surface thereof;

an effluent water chamber that is partially separated from said oil disengagement chamber by an under flow baffle which ducts said substantially oil free volume of water from said oil disengagement chamber to said effluent water chamber; and

a flow retarding member that controls an output rate of water from said effluent water chamber wherein said output rate depends on the level of said mixture in said oil disengagement chamber and wherein said flow retarding member is configured with reference to expected inflow of said mixture into said oil disengagement chamber such that during operation, the level of said mixture varies between a low level to a higher level thereby providing an active lag capacity of said mixture between said higher level and said low level.

~~wherein outflow from said chamber is limited by flow retarding means to a predetermined function of the level of said oil and water mixture in said chamber; said oil disengagement chamber is partially separated from an effluent water chamber by an under flow baffle which ducts said substantially oil free volume of water to said effluent water chamber.~~

54. (Currently amended) The separator of Claim 53, wherein said flow retarding means ~~is operable only~~ member operates between ~~said~~ a chamber low liquid level and a chamber high liquid level.

55. (Currently amended) The separator of Claim 54, wherein said flow retarding means ~~member~~ member comprises at least one siphon which primes at said chamber high liquid level and loses prime at said chamber low liquid level.

56. (Cancelled).

57. (Cancelled).

58. (Cancelled).

59. (Currently amended) The separator of Claim ~~58~~ 53, wherein said active lag capacity is sized with reference to:

(a) inflow rate; and

(b) desired residence time of said oil and water mixture in said oil disengagement chamber.

60. (Previously amended) A method of converting an oil from water separator which normally operates liquid full into an oil from water separator which has an oil disengagement chamber, said method comprising:

adapting said oil disengagement chamber to receive an oil and water mixture and retain it for a sufficient time in a relatively undisturbed state whereby oil in the mixture floats to the top of the mixture resulting in a substantially oil free volume of water having a layer of oil derived from said oil and water mixture floating on the surface thereof, the oil disengagement chamber being partially separated from an effluent water chamber by an under flow baffle which ducts the substantially oil free volume of water to the effluent water chamber, the oil disengagement chamber having a low liquid level which is higher than the under flow baffle; and

Appl. No. : 07/403,860
Filed : February 22, 2000

installing a flow retarding device in or in association with a weir wall of the decant separator so that a rate of outflow of the substantially oil free volume of water is controlled as a function of the head of the liquid in the effluent water chamber.

61. (Previously amended) An oil from water separator system as defined in Claim 33, comprising a plurality of oil from water separators each as defined by Claim 33, said plurality of separators connected in series whereby outflow from each preceding separator passes to an inlet of the next succeeding separator.

62. (Cancelled).